Office Memorandum • UNITED STATES GOVERNMENT

TO : The File

DATE: 5 November 1953

FROM : [redacted]

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SUBJECT: Field Trip Report - RD-27, Task Order #2

1. On 4 November, I visited [redacted] to discuss the details on the progress of the subject contract. Representing [redacted]

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2. As the program now stands, [redacted] intends to provide us with one model of a transistor receiver operated in the frequency range of 2-8 megacycles in 2 bands. This represents a departure from the original plan providing us with theoretical data concerning transistors and their application. This portion of the program should be completed by the end of this calendar year at which time, approximately $10,000 will remain allocated to this contract. [redacted] has suggested that this $10,000 be utilized to continue transistor application investigation for one more year. Essentially, this means that the present program would be drastically cut and that we would receive reports providing information concerning [redacted] development in the transistor field both as to circuit application and transistors for transmitter use. In the event that we decide to accept this program, [redacted] will ask for a one year extension to the contract without additional funds. As an interim measure, [redacted] is going to request a one month extension which will permit the Project Group to spend the remainder of this year in active construction of the model receiver. The one month extension would be required for the preparation of the final report.

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3. I supplied [redacted] with some rather indefinite figures to serve as a specification in order to obtain a fairly firm idea of the order of magnitude of the funds required for developing the pre-production models of a transistor receiver to operate in the range of 3-12 megacycles. [redacted] will prepare a rough estimate as to the cost of this program. The [redacted] engineers are fairly optomistic as to obtaining the 12 megacycle response, however, their bid will be based on a receiver which will function from 3-12 megazycles but may lack a satisfactory noise figure above 8 megacycles. [redacted] was asked to provide the following information:

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(a) Cost of 10 Pre-production Models
(b) Cost of 10 Production Prototypes, including tooling costs
(c) Estimate date of completion

It should be borne in mind, that the costs which will be supplied us will provide only an order of magnitude and cannot be considered a direct quote.

4. An engineering model of the 2-8 megacycle receiver is now being fabricated. The receiver without batteries will be enclosed in a case 6" x 3" x 1 1/16". The receiver is expected to have a sensitivity of 15 microvolts with a 10 db signal to noise ratio at one milliwatt output into a 4,000 ohm load.

5. [redacted] of the Pre (?) Production Design Group demonstrated a receiver which would operate in the range of 45 to 50 megacycles utilizing hand-picked transistors. This unit excluding batteries was somewhat larger than a cigarette pack. A battery pack approximately one inch square by 2½ inches wide was being designed to plug into the base of the receiver. The receiver was crystal controlled using a crystal manufactured by Hunt, Carlisle, Pennsylvania. The crystal was encased in a metal container of the same size as the [redacted] The group working on our receiver project believe that an improved version of this set could be made by using dual conversion and junction type transistors similar to those used in the I.F. strip of our model receiver. (The present unit uses a TA172 transistor mixer and selected TA172 transistors in the 4.3 megacycle IF strip) It is felt that this unit could be readily adapted to a multitude of frequencies by use of a plug-in RF section. This receiver was of RCA design specifically intended for use with the PRC-10 FM transceiver. The engineers pointed out that ~~such~~ units had been made to operate as high as 900 megacycles with extremely carefully selected transceivers. (Not necessarily of miniature design).

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6. In general, I was very favorably impressed with the work [redacted] was doing on our project as well as with their own project in the development of transistor equipment. I believe that a further investigation as to possible requirements for a VHF or UHF receiver of the type being constructed by [redacted] for Agency use should be made. Possibilities which present themselves

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are the uses of this equipment in conjunction with the disaster net and as a border crossing set.

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